

Curation of Returned Samples

Discovery Program 2004 and Missions of Opportunity

5.2.2 *Protocols and Policies for Handling Returned Samples*

Curation Responsibility: All samples of extraterrestrial planetary materials returned by Discovery missions are NASA property (see NASA Procedural Requirement NPR 7100.10D in the proposal library) and must be delivered to and processed by the NASA Astromaterials Curatorial Facility located at NASA's Johnson Space Center (JSC); contact Dr. Carlton Allen, Astromaterials Curator, telephone (281) 483-5126, (Email carlton.c.allen@nasa.gov). This facility is responsible for the physical security, inventory accountability, environmental preservation, and distribution of the samples in support of scientific research programs organized around each mission, including sample processing in support of the mission science team.

Curation Costs: Funding for use of the JSC Curatorial Facility, including all required laboratory construction or modification, must be included in the budget for the proposed mission. The actual costs for all aspects of curation will be borne by the mission at least two years prior to and two years following spacecraft return.

Early Science / Preliminary Examination: Samples to be used by the science team shall be allocated under procedures similar to those currently in use for other astromaterials collections, but expedited to allow early science return from the mission team. Mission proposals are expected to budget for the preliminary examination of the samples and should describe how samples will be processed during the early science/preliminary examination period. The goal should be to provide, within six months of sample return, a catalog containing sufficient information to allow the community at large to propose research with the samples.

Curatorial Representative: On request, the Astromaterials Curator will provide a curatorial representative to assist the PI in planning for sample handling, and PIs are encouraged to include the curatorial representative as a full member of the mission science team.

Samples for Foreign Participants: As a proportionate return for investment by foreign participants in a mission that returns extraterrestrial materials, a fraction of the total returned sample may be forwarded to the national curatorial facility of the contributing country within six months after return to the NASA Astromaterials Curatorial Facility. It is expected that the amount of sample so transferred will be approximately proportional to the non-U.S. contribution, but in no case will be more than one-third of the total sample. Any material allocated to foreign members of the Science Team during the Preliminary Examination period shall be included in this one-third limitation. The terms and conditions of selection of a sample fraction for transmission to the contributing country must be specified in the mission proposal. However, in the event that the mission is selected, the final arrangements for the transfer of a fraction of the sample to the contributing country must be established through an exchange of letters or a Memorandum of Understanding (MOU) between NASA (with approval of the Astromaterials Curator) and the contributing foreign participant.

APPENDIX D

DISCOVERY PROGRAM LIBRARY

The Discovery Program Library (DPL) includes documents available electronically via the Internet; many documents are also available as a paper copy from their original source. Note that not all documents are actually located in the DPL. For these documents, an Internet hyperlink has been provided via the DPL to allow download of the documents from their home location.

It is incumbent upon the proposer to ensure that the documents used in proposal preparation are of the date and/or revision listed in this Announcement of Opportunity (AO).

The DPL is accessible on the World Wide Web at the URL:

<http://discovery.larc.nasa.gov/discovery/DPL.html>

Discovery Guidelines and Requirements Documents

NASA Astromaterials Curatorial Facility (February 2004)

Provides guidelines specific to sample return mission proposals for use of the NASA Astromaterials Curatorial Facility.

Curation Responsibility: Any samples of extraterrestrial planetary materials returned by Discovery missions must be delivered to the NASA Astromaterials Curatorial Facility located at NASA's Johnson Space Center in Houston, TX. Investigation teams will be responsible for all aspects of the delivery of such materials to this facility, which will be given the task of providing for the physical security, inventory accountability, environmental preservation, and distribution of the samples in support of scientific research programs organized around each mission, including sample processing in support of the mission science team. NASA shall keep the remainder in pristine condition for research competitively proposed by the community at large.

Mission Budget: Funding for use of the Curatorial Facility, including laboratory construction or modification, must be included in the budget for the proposed mission. The anticipated costs of sample curation are based on the following guidelines:

Sample Isolation: The Curatorial Facility currently houses the Apollo lunar samples, Antarctic meteorites and cosmic dust in separate laboratories. By 2008 the curation of new sample sets from the Genesis, Stardust and Hayabusa missions is anticipated. Samples from any new mission must be kept physically isolated from current and anticipated collections, to preclude cross-contamination. Isolation may require the construction of new laboratories or the modification of existing facilities.

Curation Costs: The actual costs for all aspects of curation specific to a new sample return mission will be borne by the mission for at least two years prior to and two years following spacecraft return. Costs include laboratory construction or modification, operation and personnel.

Special Requirements: Any requirements for special sample containment and handling beyond those needed for scientific purposes will be determined prior to launch by the NASA Planetary Protection Officer in accordance with NPD 8020.7E "Biological Contamination Control for Outbound and Inbound Planetary Spacecraft" or the current revision. The additional curation costs generated by any such special requirements will be borne by the mission.

General Guidelines and Requirements Documents

NPR 7100.10D Curation of Extraterrestrial Materials (February 2003)

Provides information on the curation of extraterrestrial materials via NASA's Curatorial Facility at JSC.

EXCERPT

5f. The Center Director of Johnson Space Center (JSC), or designee, the Astromaterials Curator, is responsible for the following:

- (1) The curation of all extraterrestrial material under NASA control, including future NASA missions. Curation includes documentation, preservation, preparation, and distribution of samples for research, education, and public outreach.
- (2) The physical security, protection, preservation and environment of extraterrestrial materials at JSC Curatorial Laboratories; and the suitable offsite storage of a representative sampling of the curated extraterrestrial materials.
- (3) The development and maintenance of the system of detailed procedures through which the distribution of curated extraterrestrial materials are controlled, and the implementation of that system in conjunction with other NASA offices as necessary.
- (4) The development and maintenance of a unified, thorough, and up-to-date set of procedures on control and security of curated extraterrestrial materials.